

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)	
)	
Reassessment of Federal Communications)	ET Docket No. 13-84
Commission Radiofrequency Exposure Limits and)	
Policies)	
)	
Proposed Changes in the Commission’s Rules)	ET Docket No. 03-137
Regarding Human Exposure to Radiofrequency)	
Electromagnetic Fields)	
)	

To: Office of the Secretary
 Federal Communications Commission
 Washington, DC 20554

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August 29th, 2013

AFFIDAVIT OF KEVIN KUNZE

State of California

Contra Costa County

I, Kevin Kunze, attest that my statements are true to the best of my knowledge.

Comment round for FCC ET Docket No. 013-84 and ET Docket No. 03-137

1. My name is Kevin Kunze. My address is 1508 Parker Street, Apartment C, Berkeley, California, 94703.
2. I am an Instructional Media Technician and small business owner.
2. For the past three years, I've been interviewing doctors, researchers, and politicians about the potential long-term health effects from cell phones. Below is a transcript from the documentary. If you would like a copy of this film, please just let me know.

Black screen. A cell phone rings. More phones go off, louder. The ringing stops and there is silence.

KEVIN KUNZE (V.O.)

The first cell phone I ever had was one that I shared with my family. We passed it back and forth whenever my brother and I were going out to the high school football games. I used to pretend like I was Zack Morris on *Saved by the Bell*. When I entered high school, I got my first real phone all to myself. Since then I've owned numerous brands, models, and styles. I honestly can't imagine living without my phone and I'm not only one.

Vintage footage of antique mobile phones.

KEVIN KUNZE (V.O.)

Since the 1920's people have had ideas about wireless communication. In the 1970's, handheld mobile phones began to gain notoriety. Forty years later, cell phones have revolutionized how the world stays connected. They allow us to

communicate information across the globe faster than ever before. They're powerful computers that fit neatly in our pockets. As cell phones continue to evolve, the number of young users is also increasing. In the United States, one third of eleven year olds own their own phone.

Young children talk on cell phones.

KEVIN KUNZE (V.O.)

I experienced this firsthand when I moved to San Francisco and was surrounded by all of the technology sprouting out of Silicon Valley. I gained a newfound appreciation for technology and began to rely on my cell phone more and more. It became my TV remote, my camera on the go, and I even used it to buzz people into my apartment.

Kunze uses his phone in different scenarios.

KEVIN KUNZE (V.O.)

It wasn't until my last year at college I started to think about the real impact technology could have on our lives. Zack, a friend of mine at school told me a story about his father who had been diagnosed with a brain tumor. Alan Marks' family and doctors attributed the disease to his twenty years of cell phone use. It was the first time I had heard a story about a cell phone harming someone.

The screen flickers with static and a 20/20 news report turns on.

DIANE SAWYER

We are going to be raising new questions about the safety of cell phones. You'll remember there were alarming reports a few years ago about brain cancer.

Static changes the channel to FOX.

SHEPARD SMITH

Every cell phone emits some radiation. Whether it's enough to cause cancer most scientists say is still frankly unknown.

Static changes the channel to Comedy Central.

STEPHEN COLBERT

But cell phone manufacturers are looking out for us folks. They recommend that you hold the device 15mm away from your head which conveniently happens to be the thickness of an Amy's frozen burrito. A quick ten minute call to Nanna and lunch is ready.

KEVIN KUNZE (V.O.)

We all know that Stephen Colbert is funny but was this just another case of truthiness? I was surprised to find online that nearly every cell phone manual includes fine print information about radiation exposure and the safer ways people could use their phone. I even looked in my own iPhone manual and found that I also was warned to "keep [my phone] at least 5/8 inch away from [my] body and only use carrying cases or belt clips that maintain at least 5/8 inch separation." Some manuals such as the Blackberry Torch, go as far to say: "keep the device at least .98 inch from your body (including the abdomen of pregnant women and the lower abdomen of teenagers)."

KEVIN KUNZE (V.O.)

Needing to find out whether cell phones could cause harm, I decided to arrange interviews across the country with the top experts. I met with doctors, researchers, patients, politicians, and the telecommunications industry. I hoped through my interviews, I would finally uncover the the truth about cell phone radiation.

Title card: **MOBILIZE**

KEVIN KUNZE (V.O.)

I started locally and learned that in 2010, San Francisco had passed a Right to Know bill to better inform consumers about the potential risks of radiation and the safer ways people could use their phone. The bill was passed unanimously by the Board of Supervisors and former Mayor Gavin Newsom.

GAVIN NEWSOM

Lt. Governor of California

San Francisco Mayor (2004-2011)

Requiring specific absorption rates, which is basically what's emitted in your cell phone to be made available at point of sale when you purchase a cell phone. I can assure you this is controversial legislation.

DEBBIE RAPHAEL

Director, Dept. of Toxic Substances Control, Cal/EPA

Director, Toxics Reduction, City of San Francisco (1999-2011)

We had to develop regulations to show how we would actually implement the ordinance: what the stickers would look like, what the material will look like that are given out at the retail site. We got slapped with a lawsuit by the telecom industry. The CTIA is the name of the organization that represents cell phone manufacturers and service providers.

KEVIN KUNZE (V.O.)

The CTIA or the Cellular Telecommunications Internet Association was founded in 1984 and is a powerful, multi-billion dollar, trade organization, which lobbies for major cell phone manufacturers and service providers.

A spinning rolodex shows the CTIA board members

KEVIN KUNZE (V.O.)

Their officers and board of directors includes Apple, Sprint, Verizon, AT&T, Samsung, Microsoft, Motorola, Ericsson, Nokia, BlackBerry, T-Mobile, LG, and Qualcomm. The CTIA claims that the safety bill is "alarmist" and would cause "consumer confusion" and "widespread panic." They argue that requiring these precautionary statements violates their First Amendment rights or their freedom of speech as corporations.

JOHN WALLS

Vice President, CTIA

We think that their activity is certainly false. It's harmful in that it creates misperceptions and that's why we've taken them to court.

KEVIN KUNZE (V.O.)

In spite of the cell phone companies claims, brain tumor victims picketed the CTIA's conference in San Francisco earning major media attention.

LAWRENCE LESSIG, J.D.

Director, Edmond Safra Center for Ethics, Harvard University

Framework of First Amendment analysis is that it forbids the government from banning and restricting speech. And in the context of providing more information, indeed just adding a bold

mark to information that's already provided by the technology companies, the government isn't restricting anybody's speech at all. It's just making people aware of information that's out there and giving them the opportunity to judge what to do with that information. And I think that's absolutely a legitimate step for the government to take.

GAVIN NEWSOM

There's a lot of studies around the world, particularly with younger people, people who are pregnant, that there could be some harmful impacts. The industry is paranoid of these and is absolutely vehement that that's nonsense and they have all their data to prove that it's nonsense. I actually got convinced that there was something to this and all I said is 'right to know.' I said, "I don't know if it's true or not but I think people have a right to know what this is."

Headlines about the cell phone safety bill and the lawsuit.

GAVIN NEWSOM

The industry came down hard on us. They actually canceled their conference here in San Francisco. I was running for higher office. Trust me this is not an industry you want to infuriate. I'm a big believer in technology. I'm writing a book about this - technology, social media. And I use my iPhone. I love it and I'm not encouraging you not to or discouraging you. But I just think you have a right to know about this so the question is a good one. And we got a lot of grief. A lot of blowback and I'm still paying a big price for that.

An iPhone notepad types out:

**In June 2010, San Francisco passed cell phone safety legislation.
The bill has not been implemented because of the CTIA's lawsuit.**

EXT. 9TH CIRCUIT COURT - DAY

FADE IN:

**CTIA vs. San Francisco
9th Circuit Court
August, 9th, 2012**

FADE OUT:

VINCE CHHABRIA, J.D.

Deputy City Attorney, San Francisco

Part of the reason it's been two years since San Francisco enacted it's original bill is because the policy makers were very conscientious about listening to reasonable objections from the wireless industry about the content of the materials. And the policy makers responded to the reasonable objections. After the city changed it's disclosure requirements, to address many of those objections, that wasn't enough for the wireless industry and they continued to sue. And you're right that this has been delayed for several years now in light of the fact that there is no reasonable First Amendment argument that this ordinance is unconstitutional, it's inappropriate to have further delay.

INT. SAN FRANCISCO CITY HALL

GERARD KEEGAN

CTIA, Director of Legislative Affairs

While these assertions have gained increased public attention currently no scientific evidence establishes a causal link between wireless device use and cancer or other illnesses.

ERIC MAR

San Francisco Supervisor, District 1

There's a Shoemaker study from the British Journal of Cancer from 2005 showing an 80% risk of acoustic neuroma on the same side of the head as reported phone use was found for people who used cell phones for 10 years or longer. The Sadetzki study from the American Journal of Epidemiology showing a 49% - 58% risk of salivary gland tumors among the highest value users on the side of the head where the phone is used. And lastly the study from 2007 from the Environmental Health Perspectives showing and analyzing 59 peer reviewed publications found that those funded by the industry, I guess your industry, were 10 times less likely to show adverse effects associated with cell phone use compared to those studies funded by public agencies or public health charities and other groups. Could you just respond to those?

GERARD KEEGAN

Sure. First, we don't fund any studies here in the United States. CTIA's not involved in researching anything.

KEVIN KUNZE (V.O.)

Mr. Keegan's statement wasn't exactly true. In 1993, when fewer than 1% of Americans used cell phones, the mobile phone industry faced a serious challenge to its public reputation. David Reynard filed a lawsuit against Motorola claiming that cell phone use had caused or accelerated the growth of his wife Susan's brain tumor. Susan died a month after filing the lawsuit, David spoke out on Larry King Live.

DAVID REYNARD

Well we're suing the carrier. We're suing the manufacturer.

KEVIN KUNZE (V.O.)

The negative publicity generated by the episode caused telecommunication stocks to lose more than 10% of their value and within the next decade, dozens of additional lawsuits would follow. To ease public concern and avoid government pressure, the CTIA, in partnership with the federal government began a \$28 million dollar research program called Wireless Technology Research led by George Carlo. Carlo's job was to produce a body of studies on the human and experimental impacts of cell phones. Carlo had no previous experience with radiation research but had conducted research for Dow Chemical, the Chlorine Chemistry Council, and Philip Morris, which tried to produce a 'safer cigarette.'

KEVIN KUNZE (V.O.)

The Wireless Technology Research studies were primarily funded by the CTIA, the same association that's currently suing over the cell phone safety bill. Carlo's industry-sponsored studies would be over after only six years. Photos of Carlo fishing with then CTIA chief, Tom Wheeler suggest the two got along quite well. However, when Carlo's research began to show biological damage, his relationship with the CTIA turned sour. Documentation shows that Carlo suggested a second run of studies for \$50 million but was denied by the CTIA.

GEORGE CARLO, Ph.D.

When they found that we had findings of genetic damage and increasing the risk of cancer, they cut off our money completely.

KEVIN KUNZE (V.O.)

Shortly thereafter in 2001, Carlo released a book about the industry's suppression of research with journalist Martin Schram entitled Cell Phones: Invisible Hazards in the Wireless Age. To

date Carlo's studies are one of the largest U.S. research efforts ever conducted on cell phones and the potential health effects.

GEORGE CARLO

There are no studies that have been done on people that use mobile phones that provide conclusive evidence of safety. Now the industry spins the science and they put it out there for public consumption as though these studies are evidence of safety. It is scientific fraud.

KEVIN KUNZE

Around the same time Carlo's studies were being defunded, President Bill Clinton and Al Gore passed the Telecommunications Act of 1996, which deregulated the cell phone industry by allowing them to control placement of cell towers regardless of health or environmental concerns. In 2012, the CTIA invited Clinton to deliver the keynote speech at their conference. Other previous CTIA speakers include President George Bush Sr. and Gore. **In 2013, President Obama nominated cell phone lobbyist Tom Wheeler to be the next chairman of the FCC, the organization which regulates the radiation levels for cell phones.**

INT. CETECOM Phone Testing Facility

FADE IN:

**CETECOM
Cell Phone Testing Facility
Milpitas, California**

KEVIN KUNZE (V.O.)

To find out more about the radiation exposure from phones, I arranged an interview at CETECOM, an accredited cell phone testing facility with about 20 years of experience in mobile technologies. CETECOM is a neutral partner of the industry that ensures they meet international safety standards for radiation exposure. They have labs all around the world but I went to their facility in Northern California to have my phone tested.

HEIKO STREHLOW

Director, Compliance Services, CETECOM

The Daisy system is a system to scan the radiation, which is emitted from a mobile phone and absorbed by your body or brain. The Daisy system is computer controlled executing first an area scan to determine the so called "hot spot" of radiation.

DEBBIE RAPHAEL

What's interesting about the regulation of cell phones is it's looking at the heat effect so SAR (Specific Absorption Rate) is how much heat is absorbed into the head, into the body. The way they measure the penetration into the head is they take a fake head, a model of a head and they assume that there's an ear that's 10 mm thick. And then they put the cell phone next to the ear so 10 mm away from the head and then they stick a probe inside that fake head and see how much heat is absorbed. So there's some assumptions with that. Number one is that everyone's got the same head size as a 200 lb male and the other is that everyone's ear is 10 mm thick and that you're not pressing your phone squishing it to your ear to get it closer. So those are the assumptions that are made for the head.

DEVRA DAVIS, Ph.D., M.P.H.

Former White House Health Advisor

The specific absorption rate or SAR of phones was first developed almost two decades ago based on the top 10% of military recruits. This Standard Anthropomorphic Mannequin, we call him SAM for short, stood a little more than 6'2, weighed a little more than 220 lbs. His head weighed about 11 lbs. His brain is bigger, his skull is thicker than most of the world's cell phone users today. When my eight month old grandson showed that he was really smart with a phone, I began to get curious about what we knew about cell phones and what I found really concerned me. I learned that other countries, mainly Israel and England, had already issued warnings that children should not even use cell phones. Then I began to do research on this about seven years ago. The brain of a child absorbs twice as much radiation as an adult. That's a stunning fact, few people are aware of it. And we're marketing phones and pushing advertising with E-Trade babies talking into cell phones and children running businesses with little phones as though they're benign devices.

JOEL MOSKOWITZ, Ph.D.

Director, Center for Community Health, UC Berkeley

I don't think SAM and whole the test of the SAR is a good simulation in terms of the typical user today. These tests have been mandated since 1996 with an act that the Federal Communications Commission regulates. The problem with the SAR is that it assumes that there is a thermal mechanism and that there is only a thermal mechanism that can harm you namely heating and yet we know quite well now that the harm being produced by these phones is not due to a heating mechanism.

DEBBIE RAPHAEL

What's been interesting about the science now is that we're learning that there are different ways that the brain might be affected by cell phones beyond heat. There's a new study that just came out showing that the brain cells are stimulated when a cell phone is on. You're not on the phone, the cell phone is just on next to your head. So it's communicating to that cell tower, it's going into your head at the same time and it's causing chemical changes in your brain cells showing some sort of activity. So that's interesting. That's not part of the regulatory process. That's not part of the safety determination at this point in the way the FCC is regulating cell phones.

HUGH TAYLOR, M.D.

Director, Yale Center for Reproductive Biology

Even when you're not talking on the phone, as long as the phone is turned on, it is emitting radiation. It is in constant communication with the tower so you do not have to be talking on the phone 24/7 to have an exposure 24/7. If you're pregnant and walking around with your cell phone in your pocket near your abdomen or in your handbag held next to your abdomen or clipped to your belt you're getting that exposure continuously. Radiation varies with the square of the distance from the object that's emitting the radiation so you move it twice as far away you might have a fourfold reduction in the amount of radiation exposure. It doesn't take a lot of distance to start dramatically reducing your exposure.

STEVE WOZNIAK

Co-Founder, Apple Inc.

Well I'd been into radio and ham radio all my life so I had heard such things about radio phones, ship to shore telephones and these sort of things. Even before we had what we call smartphones, there were phones that were kind of doing a lot of those things. Eventually, phones worked themselves up to the way Blackberrys could do messaging. Then it moved up to where Blackberrys used real cell frequencies and got higher bandwidth and started building in ability to do internet. The radio frequencies in today's cell phones often include GPS (operated on one frequency up to some satellites), cellular (operating to the nearest towers and switching towers and frequencies all the time), Bluetooth is often built in to speak to headsets or your car hands free arrangement, and Wi-Fi so you can tap on to Wi-Fi networks.

STEVE WOZNIAK

Four different radios in one place! Radios tend to interfere with each other. You have to isolate them, you have to test them, you have to find in the laboratory you have to find exactly what compartments, parts, placement. Move something a couple millimeters sometimes fixes a problem. Or put a little metal shield between two pieces. It's a very difficult thing to have two radios in one place. You know one radio's tough to begin with. Two radios they interfere with each other. Three, four! It's a nightmare. And how do you get them inside, so small, with the antennas inside the case.

HEIKO STREHLOW

The system is capable of testing multiple antennas at one time if these antennas are capable to transmit at the same time on the same frequency. The measurements are done frequency dependent, which is of course a limitation by the liquid. We use different liquids for the different frequencies for example different liquids for 850 MHz cellular frequency or 1900 MHz cellular frequencies. The different liquids used for testing are developed by the FCC and corresponding agencies for example ANCE, in order to simulate both head liquid or brain tissue, dielectric properties, and body tissue.

RENEE SHARP, M.S.

Senior Scientist, Environmental Working Group

The liquid that is used in these models. How confident do we feel that this liquid is really truly representing our brain tissues accurately? I think that's a good question.

LELAND YEE, Ph.D.

California State Senator, District 8

As a child psychologist I know that the child's brain is very susceptible to outside influences. It is still developing, it is still maturing.

KEVIN KUNZE (V.O.)

Many companies sell products that encourage babies to play with cell phones including Fisher Price's Apptivity Case. This baby rattle, which can hold an iPhone4, is recommended for toddlers 6 months or older.

LELAND YEE, Ph.D.

We've got to take a more precautionary note. There's good evidence now that indicates the harmful effects of these cell phones to human beings, particularly to children that one ought to be very very careful and cautious about buying and making these kind of toys to young individuals.

HEIKO STREHLOW

Modern antenna device has to compromise for many different scenarios. Phones are held to the head. They can be used body worn so the manufacturers, developers have to accommodate for all these different cases and find the best compromise in order to minimize the impact on the human body and brain but at the same time maintain best connectivity toward the network.

DEBBIE RAPHAEL

For the body, the assumption is that you're wearing the phone in a holster outside your pants. That distance is anywhere from half an inch to an inch away from your body. So if you are using the phone differently than that, if you are putting it in your pocket, which is obviously not a half to an inch away from your body, it's not clear how much you're absorbing compared to the safety factor.

JOEL MOSKOWITZ, Ph.D.

Keeping the phone a reasonable distance away from your body substantially reduces the amount of radiation you're being exposed to. You also have to be aware of where you keep the phone on your body when you're carrying it around, particularly if you're a male, you keep it in your pocket. There's at least eight studies that I've found that have shown evidence of sperm damage.

DAVID CARPENTER, M.D.

Founding Dean, University at Albany School of Public Health

The evidence to date shows clearly that men who have their cell phone in their pocket or on their belt leaving it on for long periods of time suffer reduced sperm count. Nobody has really done this study yet but I will predict that men that wear their cell phone on the on mode on their belt are going to be found to have elevated risks of GI cancer, prostate cancer and other pelvic cancers.

KEVIN KUNZE (V.O.)

According to research conducted in the following nations cell phone radiation was found to damage sperm: the United States,

China, Australia, India, Poland, Japan, Turkey, Hungary, and Greece.

HEIKO STREHLOW

The typical test duration is extremely variable. So for a single scan, that means for one setup the test duration is typically between fifteen and twenty minutes plus setup time.

RENEE SHARP, M.S.

Who uses their cell phone for just 15 minutes over the course of their whole life time? No one. We're talking about very long term exposure; using a cell phone for probably more than 15 minutes every single day for years. When know from about 10 studies that cell phone radiation can damage sperm or decrease sperm count and this is concerning because we also know that there are many countries around the world that are seeing sperm count declines and increases in infertility rates including the U.S., China, many other countries. Now I would never say that these overall declines in sperm count and declines in infertility are caused directly and only by cell phones. It's probably a large number of different factors.

KEVIN KUNZE (V.O.)

Numerous medical experts have issued warnings about cell phones and sperm damage telling users, "[Their] future is in [their] hands." But new research from doctors at Yale has shown pregnant women may also be at risk.

INT. YALE CENTER FOR REPRODUCTIVE BIOLOGY

FADE IN:

Yale Center for Reproductive Biology
New Haven, Connecticut

FADE OUT:

HUGH TAYLOR, M.D.

They had the same environment, the same diet, the same exercise regiment, they were the same genetic background. The only difference between our mice were one group had an inactive cell phone and the other had an active cell phone. We chose to look at the effects on the fetus, the exposure during pregnancy because in the fetus the brain is still developing. It's one of the most fragile and vulnerable times. The cell phones were then removed

at the time of birth and we watched these mice as they developed became adults and what we found were lasting permanent effects in their behavior based on whether they were exposed to cell phones or not.

HUGH TAYLOR, M.D.

The mice that were exposed to cell phones had very different behaviors. These mice were more active. They were in some sense hyperactive. They had decreased memory. They were not able to recognize objects with repeated exposures to the same object. In some sense this resembles attention deficit hyperactivity disorder that we see in children or ADHD. This is a disease that is increasing in the United States and has paralleled the increase in cell phone use. What we find in mice may not necessarily be true for humans but certainly it does show that these biological effects are real and it gives us concern and shows the importance of investigating this further in humans.

An iPhone types out:

WHO Knew

STEPHEN COLBERT

But it turns out that my cell phone may be a hazard to me because the World Health Organization is now warning that cell phone use is quote "possibly carcinogenic to humans." Possibly? Well then I am possibly crapping my pants. Isn't there a simpler way to put this?

World Health Organization Press Recording

CHRISTOPHER WILDE, Ph.D.

I'm pleased to have with me in the IARC studios Dr. Jonathan Samet, Chairperson of the IARC working group.

JONATHAN SAMET, M.D., M.S. U.S. National Cancer Advisory Board

We reviewed all relevant epidemiology studies finding evidence particularly coming from the two largest such studies that wireless phone use was associated with higher risk for glioma, a malignant type of brain cancer, particularly in those who had the most use. These studies were carried out between roughly the major studies 1997 til 2003, 2004. There were a number of

individuals in these studies who had used their phones as long as ten to fifteen years but that is approximately the longest window on which we have observation. So we don't know what may happen as people use their mobile phones longer and longer and presumably and potentially across their full life spans.

STAN GLANTZ, Ph.D.

Director, Center for Tobacco Research and Education, UCSF

The conclusion by IARC that cell phones radiation is a class 2B human carcinogen got a lot of people's attention. I think that the level of seriousness with which this issue was being considered got ratcheted up quite a lot partially because IARC does have a reputation of being so cautious and so hard to convince of anything. I mean if you look at this list of Class 2B carcinogens that IARC has, many of them, things like diesel exhaust, are identified as proven human carcinogens by organizations like the California Environmental Protection Agency. So if you look at environmental toxins broadly, anything that makes it on the IARC list - you know there's very strong evidence of the problem.

DAVID KATZ, M.D., M.P.H.

Director, Yale Prevention Research Center

I think it's important that the World Health Organization has identified cell phone use as a potential cancer risk and I agree with the conclusion. I think what really pertains here is the precautionary principle. The burden of proof is on the industry and on those who want to say there is no risk involved. And the simple reality is that epidemiological data are inconclusive but what they suggest is that there is an unexplained increased incidence of cancer with long term use of cell phones and the cancers tend to occur preferentially on the side of the brain closest to the handheld phone. Of course, the big worry is that children are now using mobile phones extensively and that was never the case before so we're now looking for the first time at lifelong exposure, decades of exposure, and nobody knows what the implications of that might be.

An iPhone types out:

The Interphone study ended in 2004.

**Final results from the study weren't published
until seven years later in 2011.**

DAVID CARPENTER, M.D.

Well the reason was that there were a number of people who were part of that Interphone team who were absolutely adamant that cell phone use had no biological effects. And they refused to accept the evidence that the study demonstrated. While other people on that team felt that the results showed that there was a statistically significant risk and that this risk was real not an artifact of the study design. So they were at loggerheads and could not agree until a new director Christopher Wild was appointed to head the International Agency for Research on Cancer and he basically banged their heads together and said you must publish it. But the agreement was then to hide the significant results in the appendix and to have the headlines and the abstract read as though there was no relationship. I think in my judgement this is simply scientifically unethical.

JACK SIEMIATYCK, Ph.D.

Canadian Interphone Study, IARC Panel Member

My own feeling is that there is no compelling evidence that there is a relationship between cell phone use and brain cancer but there are some pieces of evidence that still point in that direction and that have not been adequately explained.

DAVID CARPENTER, M.D.

Age is important even though the Interphone study did not look at children. The work of Hardell and his colleagues in Sweden suggests that there is a fivefold greater risk of development of brain cancer if you're under the age of twenty when you began to use a cell phone. This is a study by Hardell and Carlberg published in the International Journal of Oncology in 2009. For use of a cell phone if you're under the age of twenty, they report an elevated risk of 7.8 statistically significant for ipsilateral cancer - brain cancer. Whereas if you're between the age of 20 and 49 the risk is 2.1, and if you're over the age of 50 the risk is 1.8. This is clear evidence that younger individuals are more likely to develop a brain tumor. Certainly one wants to have confirmation of reports and not take results from only one study or one particular research group but the evidence is very strong that younger people are more vulnerable to the development of brain cancer as a result of using a cell phone.

JOEL MOSKOWITZ, Ph.D.

And much to my surprise we did indeed find a significant association between tumor risk and mobile phone use and that includes cordless phones as well as cell phones. When you look across the twenty three studies you don't see the effect. However

if you partition the studies based on the research quality of the funding source and they're highly confounded you find two distinctly different patterns of results. And the non-industry funded studies found a consistent pattern of harmful effects and the effects grew stronger when you looked at people who used the phones for ten or more years or you looked for tumors on the side of the head where people reported using their phone the most.

JONATHAN SAMET, M.D., M.P.H.

Here I think it might be reasonable to look for ways to fund research that involve the industry as a partner in identifying ways to provide funds to researchers. There are models for government industry cooperation, the Health Effect Institute for example which supports research on air pollution is strongly funded by the U.S. EPA and the automotive industry. So I think seeking funding models to support research in a peer reviewed vigorous fashion is potentially a good idea.

DAVID CARPENTER, M.D.

It sometimes is easier to get funding from industry but industries, whether it's chemical industries or telecommunications companies, have a point of view - have a conflict of interest. They want results that are consistent with their bottom line. And even if that industry does not interfere directly in interpretation of the results. There is a pressure on the scientist that's doing the study to give the industry what they want because that is going to increase the probability that they could get more funding from that particular industry.

KEVIN KUNZE (talking to Samet)

So based on the IARC announcement a lot of other countries have started to take precaution-

JONATHAN SAMET, M.D., M.P.H.

Let me just check one thing.

Samet unclips his mic and walks out of the room.

An iPhone types out:

\$ELL PHONE

A scene from *Thank You For Smoking* with cell phone lobbyists.

NICK NAYLOR
Is it true?

CELL PHONE LOBBYIST 1
It could be.

CELL PHONE LOBBYIST 2
There are very few cases.

CELL PHONE LOBBYIST 3
It's not scientifically proven.

NICK NAYLOR
Look, gentlemen, practice these words in front of the mirror. Although we are constantly exploring the subject, currently there is no direct evidence that links cell phone usage to brain cancer.

The men breathe a sigh of relief.

CUT TO:

**Senate Committee on Environmental Quality
Sacramento, California**

**JOE SIMITIAN
California State Senator (D-11)**

I guess what I'm having trouble understanding is the argument that you're making which is that there is no issue here because the FCC has clearly chosen to address this as an issue worthy of their consideration. I mean you made the case, and I thought it was an important point, that there was a margin of error essentially fiftyfold. But my point is that if there is a margin of error fiftyfold now we're arguing not about whether there's an issue but about how serious of an issue it is and I think that's an implicit acknowledgment that there is an issue and please feel free to suggest to me where the flaw in my reasoning may lie.

**DANE SNOWDEN
Vice President, CTIA (2005-2011)
FCC Chief, Governmental Affairs (2001-2004)**

Well I think that you're assuming that the phones are getting to a point well above the fiftyfold safety factor, which is never happening. And that is important because how we comply with the FCC's standard based on information here.

Snowden points at some papers on his desk.

JOE SIMITIAN

No let me interrupt and make my comments clearer. Clearly there is a debate going on out there and clearly the fact that there's a debate has been recognized by the FCC then I'm harder pressed to understand the argument, Mr. Snowden.

DANE SNOWDEN

I would disagree with your last statement that there's a debate going on out there particularly among the scientific community and the governmental bodies they're responsible for doing this-

KEVIN KUNZE (V.O.)

It's interesting Mr. Snowden would say this considering his former work experience was with a governmental body responsible for regulating the safety of cell phones. Prior to joining the CTIA, Snowden worked for the Federal Communications Commission as the Chief of Consumer and Governmental Affairs. Then in 2004, he went to work for the CTIA, the organization he was regulating. Snowden left CTIA shortly after this video of him from a hearing was posted online.

DANE SNOWDEN

It tells you that we're not making this up. And I'm going to be very clear. Industry has not said once...once...that cell phones are safe.

DANE SNOWDEN

There's no debate with the FCC. There's no debate with the EPA. There's no debate with the World Health Organization. There's no debate with the National Cancer Institute or the FDA.

JOE SIMITIAN

Well then let me interrupt you again and say tell me why your manufacturers have put this information in their brochures? This is a-

DANE SNOWDEN
To comply with the FCC standards.

Laughter comes from the crowd at the committee hearing.

JOE SIMITIAN
You know candidly what I'm wondering is: is it there in order to avoid liability if and when a problem does arise?

DANE SNOWDEN
There was a big laugh when I said to comply with the FCC's standards but that is why it's there. If you read the OET bulletin it clearly states what we're supposed to say and it gets to even suggested language as to what we should say.

JOE SIMITIAN
Then if it's in your brochure because the FCC told you to put there,
your argument is we don't want the consumer to see the language that the FCC wants them to see.

KEVIN KUNZE (V.O.)
In order to get clear answers, I went to the CTIA's Conference held at the San Diego Convention Center. I met with John Walls, a former Fox Sports Anchor and current spokesperson for the CTIA.

JOHN WALLS
Ummm I don't want to talk about what a federal agency does. That's not- I'm not privy to their processes. I know that there's an interagency working group. A collaborative working group of about ten federal agencies that deal with radio frequency issues. We completely defer to what the science is and the science according to the National Cancer Institute-

JONATHAN SAMET, M.D., M.S.
U.S. National Cancer Advisory Board
The most important bottom line out of it was an increased risk in those in the highest decile, the highest ten percent.

JOHN WALLS
...the American Cancer Society...

OTIS BRAWLEY, M.D.
CMO, American Cancer Society

They consider cell phones a possible cause of brain tumors.

JOHN WALLS
...the World Health organization still...

ALI VELSHI
Journalist, CNN

The World Health Organization has added cell phones to the list of substances that are possible carcinogenic, meaning they might cause cancer.

JOHN WALLS
-the FCC, the FDA. There's a litany of organizations on whose opinion or position we put great credence and we suggest other people do that same.

DAVID CARPENTER, M.D.
To my mind, this is equivalent to people in the Middle Ages saying the Earth is flat because you can't see the horizon. These are not people who have an expertise in health effects and they are simply denying the evidence from multiple sources.

JOHN WALLS
We look to what the agencies say and that is what a well educated and well informed and balanced person would do too.

KEVIN KUNZE
Has the CTIA ever lobbied to these organizations?

JOHN WALLS
Sure. As far as educating them to what we think is appropriate in terms of the relationship or responsibility - San Francisco for example. We had numerous meetings with the city of San Francisco. If you want to call that lobbying or discussion, whatever you want to call it. We have been very clear with that group what our intent is. We haven't hidden behind any - there's no hidden agenda here.

DENNIS KUCINICH

U.S. Congressman (D-OH) (1997-2012)

From the last year on record, the telephone industry and associated communications industries spent close to \$65 million dollars in lobbying. That buys them a pretty loud voice on Capitol Hill. You can call that pressure. You can call that 'an opportunity to inform members about their concerns.'

INT. CTIA CONFERENCE

KEVIN KUNZE

Do you guys lobby financially to any of these organizations or politicians?

JOHN WALLS

No - no. I mean, to say, we make contributions to politicians but I- Nobody has any role in this whatsoever. Not that I'm aware of. But we do go to the FCC. I bet our people, our organization have had 500 meetings with the FCC over the past year on 25 different topics. So the fact that we would ever go to the FCC, if somebody thought that unusual they don't understand what's going on in regard to the give and take in the form relation of policy.

RENEE SHARP, M.S.

So the city of Burlingame in California was having a hearing on their own cell phone ordinance that was going to educate people about the potential effects of cell phone radiation. And what was interesting was that literally the day before or the day of the hearing, the FCC took down the information that they had on their website that addressed what consumers could do to protect themselves from cell phone radiation.

The FCC's site on cell phone radiation before and after the hearing.

MICHAEL BROWNRIGG

Burlingame City Council (2009-2013)

When it comes to the federal government, it would be helpful to have the FDA or one of the health agencies involved with it so one didn't have the feeling that the FCC, which is principally working with industry... It sometimes feels as if the FCC is working against local and state governments.

DENNIS KUCINICH

This is an industry that has a staggering presence in our economy. Over \$408 billion dollars in the last year in sales. Over \$21 billion in profits. Any change in the public awareness or any public apprehension of the issue would cause sales to drop and profits to drop. There's just no question about it. So I think that the industry is very concerned not to participate in any kind of form that would raise questions about safety concerns. So they don't.

An iPhone types out:

In 2008, a Congressional hearing was held on cell phones and the health effects. The CTIA was invited to speak but refused to appear.

Congress footage of Kucinich from September 25th, 2008.

DENNIS KUCINICH

The CTIA, the association of the wireless telecommunications industry declined our invitation to testify. By their refusal, unfortunately they deny this Congress and the public the benefit of their testimony and the opportunity to pose questions and hear answers.

KEVIN KUNZE (V.O.)

Because a national cell phone safety bill wasn't implemented several cities and states across the U.S. began to introduce their own precautionary legislation. To find out more about the east coast bills, I went to Portland, Maine to interview politicians and activists.

The following states turn red on a map: Maine, California, Oregon, Pennsylvania, New York, Connecticut, Wyoming, New Mexico, Hawaii, and Florida.

CUT TO:

Stuart Cobb pours out a plastic bag full of seven cell phones.

Stuart Cobb used a cell phone since age 19.

STUART COBB

Brain Tumor Patient

This is the very first flip phone I ever bought - Motorola. My second flip phone I ever bought.

He was diagnosed was a brain tumor at age 34.

STUART COBB

Then this is the first- Actually, I didn't mind this one because it was a push to talk. Then this is the first kind of smartphone I bought. Then this was my first Blackberry. And this is the last phone I own. Blackberry, a newer one. I think it's 3G or something.

KRISTEN COBB

The company that my husband worked for would supply cell phones for all their employees. When my husband was diagnosed, the day before my daughter's birthday, it was heartbreaking hearing it from the doctor that he had a brain tumor. My heart sank, I felt like I couldn't hear. I became dizzy and I just felt like my whole world just felt like it was crashing. What stuck out the most the day he was diagnosed was his physician asked him a variety of questions and the last two questions were: How often do you use your cell phone? And I'm thinking to myself what an odd question to ask.

NICK MAVODONES

Mayor, Portland, Maine (2010-2011)

I and other neighbors knew Stuart was sick and a very young man with a brain tumor and his doctor felt it could be attributed to his cell phone use and in fact he had a lot of cell phone use since he was a fairly young man. So Stuart brought it to my attention and I offered to sponsor a resolution at our city council making October of 2010, Cell Phone Awareness Month in the city of Portland.

STUART COBB

I had an awake craniotomy. So in other words I was awake through the whole surgery. The recovery was pretty long. I mean after the surgery, I couldn't talk or walk. So I had to relearn how to walk and talk over again. It's just hard being so active during your life and then have everything come crashing down around you. And basically, I've lost my whole career because of this. I've been a hard worker my whole life. This isn't like me - not being able to provide for my family. Currently, I'm on Social Security at age 36.

STUART COBB

I always held it on my right side, right here. The industry should have put warnings on these phones a long time ago.

KRISTEN COBB

We learned that there was a state representative, Andrea Boland, that lived in our state, that actually tried to get warning labels like a month prior I believe. And we were just shocked because we listen to the news, we read the paper and we hadn't a heard. You know I'm like, how could this have happened in our own state and us not know.

ANDREA BOLAND

Maine House of Representatives

Wireless industry has been very powerful in trying to confuse the issue but that's what big industry lobbyist do. They did it was tobacco. They did it was asbestos. The adoption will really I think only come with more media attention and more public outcry.

An iPhone types out:

In 2009, Main Representatives voted no to pass a statewide cell phone safety bill.

MINDY BROWN

Brain Tumor Widow

My name is Mindy Brown, my husband was Dan Brown. He was a defensive coordinator at Fresno State football team. He died March 13th, 2009. Just 18 months ago. I'm here because I'm supporting Mayor Newsom for this bold move that he's making. You guys don't know how much awareness- if anything it's bringing to the nation. People need to know. We didn't know. We didn't know your phone emits radiation. We joked about it. When my husband's ear would get bright red. He'd have to hold his phone out to here on his recruiting calls. He lived on his phone for two decades and it ended up killing him.

She holds up a photograph of his brain tumor.

MINDY BROWN

Here's a statistic, this is my husband. You're looking at him face forward just like you looking at. Here's his ear canal. You hold the phone up, ear canal, tumor.

INT. CALIFORNIA STATE CAPITOL

JOE SIMITIAN

Before we go to witnesses in opposition, Senator Strickland.

TONY STRICKLAND

California State Senator(D-19)

Let me say my heart goes out to the families. And here's one that really caught my eye. And Senator again as you know, we always get conflicting information from different organizations and different research. But this one actually has a chart. And I'm sorry I can share this after. It has a chart of growing cell phone usage among people. Dramatic, right? But then brain tumors is flat lined. So if there's such a dramatic increase in use of cell phones, why is the brain tumor not following. If it's because of the cell phone use, why is the - flatlined and not growing with the amount of cell phone usage. I mean those are the kind of questions and this is the one chart that really caught my eye.

An iPhone types out:

These statistics do not take into account data after 2006.

DAVID SERVAN-SCHREIBER, Ph.D., M.D.

Author, *Anticancer: A New Way of Life*

Realizing that I knew a lot less than I thought I did, I went to the scientific literature on that question and what I found baffled me. First, yes it's true that the vast majority of studies that have looked for a risk of cancer for people using their cell phones didn't find any. But typically they only looked at less than five or six years of cell phone use. Now think about that two seconds. Some of them looked at less than two years of cell phone use. If you had people smoke two packs of cigarettes a day for five or six years, would you see an increase in the risk of lung cancer? Absolutely not. So you look at these studies that have examined less than six years of cell phone use. You take them. You tear them. Throw them. You don't even need to read them. They're irrelevant. Now there's a handful of studies that have looked at ten years or more of cell phone use. Now they're too small and there aren't enough of them so we don't have a definitive answer but these studies all find roughly a doubling of the risk of brain tumors on the side on which people say they have been using their phone. Now this is a signal. It's not a

proof. It's a signal to me that we should be paying more attention to this issue.

JOEL MOSKOWITZ, Ph.D.

We're beginning to see some evidence coming through in the tumor registry data. I think we will see increasing evidence over time. We're not just talking about brain tumors, by the way. There is evidence of other kinds of tumors particularly acoustic neuroma or the nerve going from the brain to the ear. Also, the salivary or parotid gland there's a couple of studies. The country of Israel, for example, has already shown substantial increases in parotid gland tumors in their tumor registry data.

An iPhone types out:

**In Israel, 1 out of 4 parotid gland tumors
is in someone under the age of 20.**

**In 2000, Israelis were the heaviest
cell phone users in the world.**

TONY STRICKLAND

Again going to the chart I understand the but you have dramatic increases 15-20 years ago. You're saying now it's a 30 year window? Because again it goes way back and becomes dramatic 15, 16, 17 years ago and it has flat lined.

The following text fades over his face:

**Tony Strickland received \$87,000 from
interest groups that opposed this bill.**

LAWRENCE LESSIG, J.D.

When research is funded by an interested party and the conclusion correlates with the interested party's views, people wonder is it because of the funding or because of the truth. When a Congressman or a Senator or a state representative receives an extraordinary amount of money from an interested party and then goes out and does things that are consistent with what the interested party does. People wonder is that because the representative thinks that it's in the public interest or thinks that it's in the interest of the interest group that's giving them all the money.

SAM BLAKESLEE

California State Senator (D-15)

I guess one of my concerns is the degree to which we desensitize people when there are so many things we do want to sensitize people to with regard to what the risks are. Obviously, with a pack of cigarettes we've great lengths and we don't simply... We go to great lengths. We put on the package this will kill you in effect.

BRET BOCOK

Brain Tumor Survivor

I was an early adaptor. I used a cell phone immediately when it came out. There's a lot of good benefits from a cell phone. It's not like a cigarette where there's no benefit and that's one of the more dangerous things about cell phones. So I used a cell phone from 1988 up until - and I still do use a cell phone but I take precautions. I never put a cell phone up to my head - ever. I text and or use speaker phone and I limit my time to a cell phone. And these are all basic precautions that if I had been told about over the last twenty years I wouldn't have found myself with a brain tumor and put my life in jeopardy. Basically, I think it's my moral and ethical duty to inform other people who are not in the know on the issue as I wasn't for twenty of the years. I'm really lucky to be alive right now after the experiences I've had over the last year which I attribute unequivocally, categorically, for sure to cell phones.

CRISTIN PRISCHMAN

Brain Cancer Widow

My name's Cristin Prischman. My husband died December of 09. He was 42. He was an avid cell phone user. We lived in LA. He was in the entertainment industry. When we found out we went to Dr. Keith Black at Cedars-Sinai and we asked him how this could happen and he said cell phone. They know it causes brain cancer but what's the harm of letting people know that it does.

STEVE CARLSON

California Government Affairs Counsel, CTIA

Steve Carlson for CTIA the Wireless Association, the trade industry organization for the wireless industry and handsome manufacturers Apple, Google, Qualcomm, ect. We believe it would be a huge policy mistake even with the bill in the form that it is now. To question the safety, which in fact this does, and which certainly is the intent of the proponents.

SIEGLINDE JOHNSON

California Retailers Association

Many products that we sell come with various warnings on the label or in the users guide. Anything from iron to itch creams, in the retail environment our customers would be extraordinary confused if we had to post each of those warnings at the point of sale and our retail stores would end up looking like a NASCAR driver's suit. And consumers would be confused and possible afraid.

QUALCOMM

Qualcomm believes the only purpose this bill will serve is to create fear and uncertainty amongst consumers and that will eventually just be hurtful to the wireless industry which is really a California based industry.

ROBERT CALAHAN

Director, Government Affairs, TechAmerica

Robert Calahan was TechAmerica representing 1,200 technology companies nations wide and we are opposed to the bill.

BILL DEVINE

Vice President, AT&T

Bill Devine with AT&T. We oppose the legislation and I will take the liberty with that one sentence Mr. Chairman. One concern we have is the point Senator Leno just made moments ago and that is this label may stimulate conversation in the retail establishment.

MICHAEL BECKLER

Michael Beckler of Verizon Wireless in opposite to the bill. Thank you Chairman.

ANNE PERKINS

Manager, State Government Affairs, Sprint Nextel

Anne Perkins with Sprint in opposite to the bill.

SUSAN LIPPER

Senior Manager, Government Affairs, T-Mobile USA

And Susan Lipper with T-Mobile USA in opposite. Thank you.

INT. MARK LENO OFFICE

MARK LENO

Industry has resisted even the most minimal amount of information being disclosed. Finally we just said in our bill read your owners manual for the safest usage of your phone and they fought that as well. The more they resist the more it makes me wonder: what in fact are they hiding from us?

JOEL MOSKOWITZ, Ph.D.

The cell phone industry seems to be using the playbook of the tobacco industry in fighting any efforts particularly at the local level right now to try to do any kind of information and education or legislation around the use of cell phones. And I think in large part they're doing this to have a chilling effect at the local level. They sue San Francisco then a lot of other communities who are on the verge of adopting a similar law will probably hold back for awhile. There are about a dozen countries now that have adopted precautionary health recommendations with regard to cell phones. So I think the industry is being short sighted trying to play this game saying we have First Amendment rights. I think our system of law had really gone too far in the direction of giving rights to corporations.

INT. BERKELEY CITY HALL

FADE IN:

**Berkeley City Council
Public Forum on Cell Phone Safety**

MAX ANDERSON

Berkeley City Council, District 3

The oppressive boot of finance and money and influence on the legislative process that spills over invariably into the scientific community. I can sight you a number of reports around the issues of asbestos, smoking, and other forms of radiation. So we know what the influence and the power of money and vested interest can do to the welfare and body politics of this country. We have a responsibility to employ those principals that were developed from our life experiences having to do with how people have been bamboozled by bad products with lots of money behind them and congress people and others being bought off to look the other way. We're not looking the other way.

An iPhone types out:

Connecting the Dots

DAVID CARPENTER, M.D.

The responsible thing for the cell phone industry to do would be to provide to researchers access to the data on actual usage. The limitations of the studies to date are the exposure assessment. The cell phone industry has that data of how much time each cell phone is being used. Maybe not if it's shared among people but most cell phones are not. That's the kind of information that would really allow one to do the proper kind of study.

CUT TO:

INT. CTIA CONFERENCE

KEVIN KUNZE

If researchers had access to the call records they might be able to make better assessments about this to either prove or disprove the fact that they might have any association with cancer risk. Are you opposed to this?

JOHN WALLS

Well the federal government doesn't control any call records whatsoever. So I would be highly opposed to that. I think anybody who's a believer in the American system of life wouldn't want the federal government snooping into their-

KEVIN KUNZE

But Homeland Security has access to those records. That's what I'm saying. If Homeland Security has access would you be opposed to giving that same access to researchers just looking at the health effects.

JOHN WALLS

There's no reason to grant that access based on the overwhelming evidence of the scientific pieces of-

KEVIN KUNZE

It's kind of mixed though.

JOHN WALLS

Well we could argue about that.

An iPhone types out:

The U.S. government collects the phone records from billions of cell phone customers.

In 2011, AT&T made \$8.2 million selling call records to U.S. law enforcement.

LAWRENCE LESSIG, J.D.

Everyone's concerned about privacy in the context of access to cell phone records and rightfully so. But there are ways to architect that access so that nobody would have any fear about ever being tied specifically to particular usage patterns and instead those usage patterns can be anonymized so we can begin to understand whether there is some connection.

JOEL MOSKOWITZ, Ph.D.

Obviously we need a whole lot more research on all of these issues, which is one of the really frustrating things. So little research has been done. There's almost no funding for research and I even hear this from my European colleagues, where there's been a fair amount of research, that they've had a very difficult time finding funding outside of the industry to do anything. So we've been quite remiss on doing research on this issue. We've been very resistant to the whole issue as a nation. At least in terms of our governmental health authorities, we seem to be in denial.

DEBBIE RAPHAEL

The Mobi-Kids study is happening now in Europe. What's interesting about that study is twofold. One, that it's focusing on the safety of cell phones for children. The second thing that's interesting is that the U.S. is not participating in that study. I don't understand why that's true.

ROBERT NAGOURNEY, M.D.

Director, Rational Therapeutics

In December of 2009, I first met Donna. She was very healthy, vigorous, athletic. No predisposing factors for cancer. Family history was negative. From everything I could see there was no obvious explanation for this young woman to have breast cancer, particularly multifocal breast cancer. And the only possible association I could identify was she had a habit of always carrying her cell phone under her right brassiere strap. Breast

cancers are characteristically diagnosed in women in their fifties and sixties. The Asian population have a lower incidence overall. Due to Donna's young age, lack of risk factors, multifocal disease, Asian history, normal medical history, with no predisposing factors, I would say that she would be an unusual case.

DONNA JAYNES

Breast Cancer Patient

I don't have any history of breast cancer in my family and I also had the BRCA-1 and BRCA-2 genetic tests conducted on me and it came up negative. So I don't have the genetic mutations for breast cancer. And with each following doctor appointment it seemed as if they kept finding another tumor and another tumor. We connected the dots of where the locations of the tumors were based off the biopsy. We made marks on me of where the location of the tumors were and realized that it formed the shape of the cell phone underneath the footprint of the phone or where I used to keep it.

ROBERT NAGOURNEY, M.D.

The breast tissue in the young child-bearing years menstruating women is a fertile ground for cellular activity, metabolic activity, and arguably cancer causation. Causation in this situation may be difficult to prove. The issue here is that if there is even a small possibility that the thermal or piezoelectric effect or other pulsed electromagnetic field influences could even remotely influence the behavior biology and possible carcinogenicity in this setting, I would urge people to avoid exposure. After all, cancer is wound that will not heal. It's a chronic inflammation that we can not address. And so thermal injury is well established as one of many causative factors in disease and cancer.

JOHN WEST, M.D.

Director, Breast Care & Imaging Center of Orange County

The pattern seemed to be established from what I could see is these women tended to be younger, late thirties, early forties, some up into the late forties, that they had the cell phone in the bra for five to ten years, and the cancer occurred primarily in the upper inner aspect of the breast, which is kind of an unusual place for breast cancers, but all of them had it in the same place except for one. And the final example, the one that had it in her lower breast is even more striking. This is a woman in her late thirties who worked in a cell phone factory where she would check cell phones. They would come across underneath her breasts on a conveyor belt. She checked the phones regularly on

the conveyor belt. They were on and active. And she did this for years and she turned up with breast cancers in the lower aspect of both breasts. Now to have a young woman with mirror image breast cancer in the lower aspects of both breasts pop up sort of out of the blue in somebody with no family history. This is really unusual.

ROBERT NAGOURNEY, M.D.

I would say that would be extraordinary rare. I mean to have mirror multifocal disease in the opposite breasts in similar locations would certainly speak to some form of exposure. These tissues where there's a high degree of estrogen metabolism constituting rich lipid sources partly associated with the production of milk. The water and fat would be very good vibratory substrates for heating which is the mechanism by which microwaves work.

JOSH WOLF, M.J.

Journalist of Year (2006)

If news is a business, the consumer of the news suffers because good business decisions may not be good decisions for spreading information. Anytime you're dealing with some sort of new scientific data that runs afoul of the general common thought there is hesitance to report on it

JONATHAN SAMET, M.D., M.S.

I think the mainstream media make their choices depending on what they want to communicate. They're not, unfortunately, necessarily communicating as public health - for public health purposes they're communicating for media purposes and those may be divergent.

MARK LENO

I was taken by the fact that after a five year international study had been conducted that there was not a single story in the New York Times, the Washington Post, or LA Times. It was as if the story had been blacked out.

FADE TO BLACK:

JOSH WOLF, M.J.

Stories that are critical of cell phones aren't being put on the front page because they'd be going next to a Sprint ad and clearly Sprint has a bias in what they're going to tell you and we need to be much more mindful of who is telling us what they're telling us and why they may be telling us that.

LAWRENCE LESSIG, J.D.

You know it's absolutely clear that cell phone companies use whatever leverage they can to undermine the spread of information that's raising questions about this. Chris Ketcham, when he published his piece in GQ about cell phone radiation. GQ, I was told by former editors of GQ, had to sit on that piece for more than a year as they fought with their editorial and business units about the fact that cell phone companies were threatening to pull all advertising from GQ if they ran this article. So there's no doubt that they're going to use the pressure they can.

An iPhone types out:

**Cell phone companies threatened to withdraw an estimated
\$1 million in advertisements from an issue of GQ.**

**GQ stood strong against the threats
and the article was eventually published.**

GAVIN NEWSOM

What's remarkable is that there was no headline. There was no story about it. It was just lost in the back of an article. Apathy. People are disconnected. They just don't care. They don't believe. And why does that matter? Because that's the foundational principle that makes everything possible. Look special interest on both sides guys. They buy silence. They buy apathy. They buy politicians. In a pessimistic and fearful environment you're going to fight for your patch.

News article with headline: Motorola faces bribery probe.

KEVIN KUNZE (V.O.)

While at Dr. Robert Nagourney's office in Long Beach, I noticed a portrait of John Wayne that was donated to the doctor in recognition of his fight against cancer. Nearly 50 years ago, Wayne starred in cigarette commercials. What would people say about our ads in 50 years?

ROBERT NAGOURNEY, M.D.

Advertising is psychological warfare. I'm not a big defendant of our modern advertising agencies. Celebrities are basically for

sale and if you offer them enough money they'll advertise anything.

A montage of celebrities in cell phone commercials including: Brad Pitt, Cameron Diaz, Jean-Claude Van Damme, Megan Fox, Samuel L. Jackson, Lady Gaga, Beyonce Knowles, Eric Clapton, Mary J. Blige, Jermaine Dupri, Ozzy Osbourne, Justin Bieber, John Malkovich, Zooey Deschanel, Tom Jones, Catherine Zeta Jones, Martin Scorsese, Quentin Tarantino, Wes Anderson, and Leonardo DiCaprio.

A article with the following headline: Leonardo DiCaprio to reportedly earn \$5 million for cell phone ad.

RAFFI CAVOUKIAN
Musician / Author

I've been asked to endorse many products. I've been asked to do commercials and I've never done one in all the years that I've been entertaining children. Out of respect for the child as a whole person. Out of respect for that young audience. In terms of my song "Bananaphone" being used for a commercial, I wouldn't go for it.

INT. RICHARD BRANSON'S LIMO

A black limo drives through a LA street.

October 1999
20/20, ABC News

Richard Branson sits in the backseat of a limo with his cell phone.

RICHARD BRANSON
Founder, Virgin Group

Do not put your phone up to your ear because it could fry your brain. There is the phone, there's the earpiece. And you just keep the phone away from the body and put the earpiece in either ear. And you've got the microphone here, and you can talk. It could be like the early days of cigarette smoking. You know, we just don't know at this stage and since there's quite a big question mark over it, one might as well play it safe.

Branson demonstrates how he uses a cell phone with an earpiece.

KEVIN KUNZE (V.O.)

A month after this interview, in November 1999, Branson founded the cell phone company Virgin Mobile. He launched his company by standing nude in Times Square with a sign saying, "Nothing to hide."

Branson waves and displays a cell phone covering his privates.

KEVIN KUNZE (V.O.)

In 2006, Branson sold Virgin Mobile to the UK phone company NTL for \$1.7 billion. In 2009, Branson sold Virgin Mobile USA to Sprint for \$483 million. While Branson no longer owns a cell phone company, he continues to star in their commercials.

Richard Branson fires a gun at bad guys in an Indian Virgin Mobile ad.

ROBERT NAGOURNEY, M.D.

I think that companies that sell products are probably not overly motivated to provide reasons not to buy them. I would hope and believe that the cell phones companies, if confronted with evidence that there is a risk, would encourage their consuming public to simply use the phones more intelligently. I don't think anyone is calling for a ban on cell phones.

KEVIN KUNZE (V.O.)

I decided to make copies of my cell phone manual to show cell phone representatives at the CTIA conference.

INT. CTIA CONFERENCE

KEVIN KUNZE

The documentary is about cell phones and the health effects and I'm kind of curious to know Sprint's position on this.

SPRINT REPRESENTATIVE #1

Hey I have a gentleman here from...and he is doing a documentary on the effects of cell phones to the human body and wanted to know if Sprint would be willing to speak on camera in regards to

what we're doing about the fact that it causes...What? What did you say?

KEVIN KUNZE

Umm just in general the health effects of cell phones.

SPRINT REPRESENTATIVE #1

So I told him you needed to speak with someone in PR media. You'll send somebody right now. You can? Okay I'll send him to the lounge. Okay I'll bring him down there. Okay bye.

Kevin is taken to a tented off section of the conference.

KEVIN KUNZE

Many cell phone manuals come with a warning about keeping it about an inch away from the body.

SPRINT REPRESENTATIVE #2

Yea.. Um... We don't really have anybody here who can speak on this topic today at the show so I don't know if maybe there's a follow up that we could do separately.

KEVIN KUNZE

Definitely.

SPRINT REPRESENTATIVE #2

We can check into that.

Security escorts Kunze out of the Sprint media lounge. The following text fades in: **Sprint did not follow up for an interview.**

INT. VERIZON BOOTH

KEVIN KUNZE

I'm interested to speak with someone in PR. Would you speak with me?

VERIZON REPRESENTATIVE

I'm the PR guy.

KEVIN KUNZE
I'm interested to know...Is it okay I'm recording?

VERIZON REPRESENTATIVE
Well what do you want to know and then I can put you to the right person.

INT. SAMSUNG MOBILE BOOTH
KEVIN KUNZE
Is it okay if I record?

SAMSUNG MOBILE REPRESENTATIVE #1
Umm actually. Oh you're media! Oh yes! It's okay but I'm not a spokesperson so...

KEVIN KUNZE
I understand. I'm interested to speak with someone that would be a spokesperson.

SAMSUNG MOBILE REPRESENTATIVE #1
Let me get you to somebody. Just one second.

Kevin is introduced to another Samsung Mobile representative.

KEVIN KUNZE
Basically in all the cell phone manuals in fine print it says to keep about an inch away from the body and they also offer ways that people can reduce their exposure by using wired earpieces and things like that.

SAMSUNG MOBILE REPRESENTATIVE #2
Oh okay. I don't have a spokesperson right now to comment on that.

KEVIN KUNZE
Can I just speak with you a little bit about it?

SAMSUNG MOBILE REPRESENTATIVE #2
No I'm not an on camera spokesperson.

KEVIN KUNZE

Can I give you some information about it and maybe we can organize something with the spokesperson?

SAMSUNG MOBILE REPRESENTATIVE #2

Ok yeah. He'll be on the show floor later. If you want to come back by this afternoon.

KEVIN KUNZE

Yeah just let me know a time and I would definitely love to speak with them.

SAMSUNG MOBILE REPRESENTATIVE #2

You know I'll have to double check and see umm but let me. What's the best way to get in touch with you? Do you want to come back by maybe this afternoon?

KEVIN KUNZE

Sure what time would be best to stop back?

The representative pants heavily.

SAMSUNG MOBILE REPRESENTATIVE #2

See that I'm not sure about right now.

The following text fades in:

**The CTIA warned us to stop filming
companies at their conference.**

Kunze interviews John Walls in front of a giant CTIA logo.

KEVIN KUNZE

So I'm kind of curious to know a little bit more about the fact that this is a conference that used to be in San Francisco and you guys pulled this conference from San Francisco. I want to know was this because of the fact that they tried to pass a law that would provide more safety?

JOHN WALLS

Sure, sure. Well first off just for the record we had a contract with San Francisco that we honored and fulfilled that. And didn't have a contract to go anywhere for this year and so it was after that show last year we took open bidding. We've been here in San Diego in the past so this was nothing new to come here but frankly and we've made no bones about it some of our decision was about what the city did. What we thought was irresponsible and in some cases alarmist with the kind of materials and the kind of representation of the facts we think they're playing with right now and that's why we've filed suit against them in court. So we're challenging them based on the First Amendment of the U.S. constitution and we think we're on pretty good ground and they've gone way out of bounds.

STAN GLANTZ, Ph.D.

There's no way to get rid of the tobacco problem without getting rid of the tobacco industry. You could make much safer cell phones without really hurting the telecommunications industry. It might make the phones a little less profitable but you could make changes to the way the phones are designed and the way use is promoted that would substantially reduce the risks.

JOHN WALLS

Science tells us that these devices are safe and that is what we therefore really ground our position on.

KEVIN KUNZE

Could they be safer though?

JOHN WALLS

I think, I mean-

CTIA REPRESENTATIVE (O.S.)

No, that was the last one.

KEVIN KUNZE

OK, alright. Well thank you very much.

Kunze walks down an escalator.

DEVRA DAVIS, M.P.H., Ph.D.

I think this problem is far too big for the government. This a problem where the private sector is already stepping up to the plate by making phones that are lower powered and turn themselves off automatically. Steve Jobs apparently didn't want to have an off switch on an iPhone because it would be death. Ironical isn't it. All you need is an off switch so we can turn them on and off whenever we want to do so. That would be a great way of reducing your exposure.

An iPhone types out:

Call to Action

Gavin Newsom tests out the new Google Glasses cell phone.

KEVIN KUNZE (V.O.)

No one knows what the future holds for cell phones. Expensive new inventions worn on the face could push the boundaries of communication but also might come with an even greater cost.

DAVID CARPENTER, M.D.

Are we facing...are we going to face an epidemic of brain tumors in the coming years because of this enormous expansion of use of cell phones, of wireless technology. Everyone is exposed, whether you use a cell phone or not. You can't go into a McDonalds or a Starbucks without being in a wireless environment. Most of us have wireless in our homes and offices. We live near cell towers. Smart meters are being installed everywhere. Almost all of these give much lower levels of exposure than holding a cell phone to your head, they all emit the same kinds of frequencies and like any other toxic exposure, it is almost certain that the adverse health effects are a function of both duration of exposure and intensity.

MITCHEL BERGER, M.D.

President, American Association of Neurological Surgeons

I think it's definitely out there. Everybody is aware of the fact that it's controversial. And I think it's only going to take more time, more research, more follow up on individuals who've used a device to see if it is harmful. Absolutely we need to do more research on it and more population based studies to see whether or not there is a deleterious effect or not.

ALI VELSHI

It is a growth opportunity. A whole new industry can spring up around technology designed to keep our phones a safe distance from our heads or our hearts or our reproductive organs. Imagine all the new headsets and the radiation proof cases that can be sold.

DAVID SERVAN-SCHREIBER, M.D.

And that we and certainly people like me with brain tumors should learn how to use a cell phone with precaution. You know cars kill people, right? Motor vehicle accidents kill people all the time. Do we stop using cars? No. We're not going to stop using cell phones either...even if they are dangerous. But we use our cars in a way that reduces risk. Well we can learn to use our cell phones in a way that reduces risk.

KEVIN KUNZE (V.O.)

While we may have to wait for more research, legislation, and media coverage, the power of stardom still exists. Many celebrities have begun advocating for safer cell phone usage, and their endorsement has helped to spread awareness.

Montage of celebrities with retro phones including: Lenny Kravitz, Daniel Craig, and 2 Chainz.

CUT TO:

INT. ANDERSON COOPER SHOW

ADAM LEVINE

And the coolest thing you gave me. I can't lie-

Adam takes out a black retro phone.

ANDERSON COOPER

I'm obsessed with it.

ADAM LEVINE

Is this thing, which is like a phone but it's not a phone, you plug it into your cell phone.

CUT TO:

EVA LONGORIA

And it's great because it keeps the phone away from your face.

ANDERSON COOPER

Right but it's also very satisfying to talk to.

EVA LONGORIA

Yea-

ANDERSON COOPER

Cause you feel you could-

EVA LONGORIA

Shut up Anderson! Can you do that?

Eva holds out the phone. Anderson and the crowd chuckles.

CUT TO:

ANDERSON COOPER

So you're not actually putting the thing up to your head. So it's like you're talking on a real phone.

JANET JACKSON

Oh cool. Is this for me?

ANDERSON COOPER

Yea you can keep that one and since it's our 100th show, everyone in the audience is going home with the same phone!

The crowd claps and cheers.

CUT TO:

STEVE AOKI

Music Producer / DJ

CEO, Dim Mak Records

I became more informed and I think in general the public just needs to be more informed because we all have cell phones. This is a cell phone culture. Everyone uses a cell phone like this. For me, I always have a headset. Always. Or I use speaker phone.

JOEL MOSKOWITZ, Ph.D.

It's really pretty easy to protect yourself from cell phone radiation. Just keep the phone away from your body whenever it's turned on. When you're making a call use a wired earpiece, your speaker phone, or text. And if you keep the phone in your pocket but sure it's turned off and just periodically check your messages.

KEVIN KUNZE (V.O.)

Cell phones are not going away. They will only continue to play a bigger role because they make our lives better. But along with these new advances, it's our responsibility to educate ourselves on how to use phones safer. And only when we get connected with the facts can we regain some control and protect our loved ones. It's time for our voices to be heard. If cell phones aren't going to come with warnings labels, then we need to warn each other.

FADE OUT:
FADE IN:

FADE OUT:
FADE IN:

President Obama nominated CTIA lobbyist Tom Wheeler to be the Chairman of the FCC. Wheeler raised \$700,000 for Obama's presidential campaigns.

FADE OUT
FADE IN:

**Richard Branson continues to make cell phone ads.
Although he doesn't use them next to his head.**

FADE OUT
FADE IN:

**San Francisco's Board of Supervisors settled with the CTIA to
abandon it's cell phone safety legislation.**

FADE OUT
FADE IN:

In March 2013, the FCC released a report reassessing radiation policies. The FCC invites comments to be submitted over the next six months.

FADE OUT:

FADE IN:

There are over 688,000 people in the U.S. living with a primary brain tumor.

Brain tumors are the second leading cause of cancer-related deaths in people under 20 years of age.

The U.S. wireless industry is valued at almost \$200 billion.

FADE OUT:

FADE IN:

Take Action and #Mobilize

Learn More at
Mobilize Movie.com

FADE OUT:

FADE IN:

THE INTERVIEWEES

CUT TO:

GAVIN NEWSOM

Lt. Governor of California

And I like to think San Francisco has always been a city as they say of dreamers, doers, entrepreneurs, innovators, always on the leading cutting edge.

VINCE CHHABRIA, J.D.

Deputy City Attorney, San Francisco

If they receive this information, of course they're still going to use their cell phones. We don't want them to stop using their cell phones but they're going to use their cell phones in a different and safer way.

DEBBIE RAPHAEL

Director, Dept. of Toxic Substances Control, Cal/EPA

There's this movement in marketing circles to use cell phones younger and younger.

DENNIS KUCINICH

U.S. Congressman (D-OH) (1997-2012)

I personally would be very careful about letting any child use a cell phone.

RAFFI CAVOUKIAN

Musician / Author

Corporate social responsibility has to come into play.

GERARD KEEGAN

CTIA, Director of Legislative Affairs

It puts cell phones on par with coffee and pickled vegetables. Now-

ERIC MAR

San Francisco Supervisor, District 1

But children don't put pickles and coffee next to their head or their salivary gland tumors that the studies are showing so I think there's a bit of a difference there.

MAX ANDERSON

Berkeley City Council, District 3

Vegetables! You know, come on! Are you talking to children here? You're not!

JOSH WOLF, M.J.

Journalist of Year (2006)

Commercial interest will shape the flow of information.

ANDREA BOLAND

Maine House of Representatives

They don't do their research. If they did the evidence is there and has been there for decades.

JOEL MOSKOWITZ, Ph.D.

Director, Center for Community Health, UC Berkeley

I think there is a lot of denial at the individual level. People don't want to know that these devices are harmful because they've become highly dependant on them.

JOHN WALLS

Vice President, CTIA

We knew with whom we have to work whether it's Congress on a given issue or the FCC or administration or state.

GEORGE CARLO, Ph.D.

Chairman, WTR (1993 - 1999)

In effect, this industry is regulating itself.

HEIKO STREHLOW

Director, Compliance Services, CETECOM

The mobile manufacturers are trying to avoid additional testing.

DEVRA DAVIS, Ph.D., M.P.H.

Former White House Health Advisor

And there's no basis for standards for teenager or for children or for that matter pregnant women.

KEVIN KUNZE (O.S.)

Have there been other studies conducted in the United States on cell phone radiation and pregnancy?

HUGH TAYLOR, M.D.

Director, Yale Center for Reproductive Biology

Let's see...Not that I know of.

DAVID CARPENTER, M.D.

Founding Dean, University at Albany School of Public Health

Given all the evidence we have for adverse health effects from radio frequency radiation, to have the federal agency that regulates not even have the remotest expertise.

STEVE WOZNIAK
Co-Founder, Apple Inc.

I like his. His card is really cool. I did some plastic ones that didn't turn out good. They were kind of like too thick and this one's really nice.

RENEE SHARP, M.S.
Senior Scientist, Environmental Working Group

I think we're going to be fighting about this for a long time.

LELAND YEE, Ph.D.
California State Senator, District 8

Tremendous lobbying efforts that go on to try to persuade members to not support Senator Leno's legislation.

MARK LENO
California State Senator, District 3

As soon as we can get publicly financed campaigns in place we'll see a significant shift to people power.

STAN GLANTZ, Ph.D.
Director, Center for Tobacco Research and Education, UCSF

One of the big difference between cell phones and tobacco is that cell phones are actually useful. I mean the only thing that tobacco does is kill people and make some money for big multinational corporations.

JONATHAN SAMET, M.D., M.S.
U.S. National Cancer Advisory Board

While a study may not show a statistically significant association, that does not mean there is no risk.

DAVID KATZ, M.D., M.P.H.
Director, Yale Prevention Research Center

We don't need to see a massive increase in the rates of brain tumors if you're the one individual who develops a brain tumor that wouldn't have happened if you didn't have this exposure.

STUART COBB

Brain Tumor Survivor

This is the United States where we scrutinize vitamins before we put them out for sale but we can't do premarket testing on phones.

KRISTEN COBB

Why didn't our government in the beginning test against the skin. That's something that needs to be looked at.

MICHAEL BROWNRIGG

Burlingame City Council (2009-2013)

There was a very serious threat of litigation. We're a small town. We can't afford to be sued and go to court with the cell phone industry.

NICK MAVODONES

Mayor, Portland, Maine (2010-2011)

When I'm not using my cell phone, instead of keeping it in my pocket or on my hip, I leave it in my briefcase or somewhere in my office.

STEVE AOKI

Music Producer / DJ

CEO, Dim Mak Records

(wearing headphones)

I'm like this all the time. Plus, when you have this on when you're walking around, people don't really bother you.

ROBERT NAGOURNEY, M.D.

Director, Rational Therapeutics

I have two boys, ages twelve and fifteen, and they both own cell phones. And they are both instructed to keep their telephones not away from their bodies but turned off during the day.

JOHN WEST, M.D.

Director, Breast Care & Imaging Center of Orange County

And based on some of our other information it just leads me to believe that we should be cautious.

LAWRENCE LESSIG, J.D.

Director, Edmond Safra Center for Ethics, Harvard University

The very cell phone companies they're selling a cell phone and telling us that they're us are at the same time telling us we

should hold them an inch from our head. We should wonder what exactly does that mean.

FADE OUT:

FADE IN:

**This film is dedicated to all those who attribute
their cancer to long-term cell phone exposure.**

FADE OUT:

FADE IN:

**Dedicated to the Following Cancer Patients and Their Families
Alan, Ellie, Zachary and Amanda Marks**

Andy Solomon

Bret Bocook

Cristin and Paul Prischman

Dan, Mindy, and Larry Brown

David Servan-Schreiber

Jean and Mark Brooks

Jimmy Gonzalez

Keith Phillips

Kristen and Stuart Cobb

Milton and Abigail Marks

Mindy, Larry and Dan Brown

Steven and Daphne Jasperes

Teresa Gregorio

FADE OUT:

If you've made it this far I hope you strongly consider reevaluating the radiation standards for cell phones.

Respectfully submitted by

Kevin Kunze

1508 Parker Street, Apartment C

Berkeley, California, 94703

August 29th, 2013